WHAT IS CLAIMED IS:

1. A fuse programming circuit for sequentially programming a plurality of fuses comprising:

a plurality of fuse latch circuits for holding fuse programming data indicating which of the fuses are to be blown;

a fuse pointer circuit for selecting fuses configured to asynchronously advance past fuses that are not to be programmed to select fuses that are to be programmed, as indicated by the fuse programming data; and

a blow circuit configured to apply a blow voltage to a fuse selected by the fuse pointer circuit if the fuse programming data indicates the selected fuse is to be blown, wherein the application of the blow voltage to the fuse is synchronized with a blow clock signal.

2. The fuse programming circuit of claim 1, wherein the fuse pointer circuit is configured to asynchronously advance during a pointer advance mode defined by a pointer advance clock signal.

3. The fuse programming circuit of claim 2, wherein the fuse pointer circuit comprises a plurality of fuse pointer latches, each associated with one of the plurality of fuses.

4. The fuse programming circuit of claim 3, wherein the fuse pointer circuit is configured to select a fuse when the fuse pointer latch associated with the fuse contains a first value and the fuse pointer latch associated with a previously selected fuse contains a second complementary value.

5. The fuse programming circuit of claim 2, wherein the fuse programming circuit further comprises a control signal generating circuit configured to receive an external

clock signal and generate the blow clock signal and pointer advance clock signal based on the external clock signal.

6. The fuse programming circuit of claim 5, wherein the blow clock signal and pointer advance clock signal are non-overlapping.

7. The fuse programming circuit of claim 1, wherein each of the plurality of fuse latch circuits holds a bit of fuse programming data for an associated one of the plurality of fuses.

8. The fuse programming circuit of claim 7, wherein the blow circuit is configured to apply the blow voltage to the fuse selected by the fuse pointer circuit if the bit of fuse programming data in the associated fuse latch circuit indicates the selected fuse is to be blown.

9. The fuse programming circuit of claim 8, wherein the associated fuse latch circuit is configured to change the bit of fuse programming data after the associated fuse is blown.

10. The fuse programming circuit of claim 2, wherein the associated fuse latch is configured to change the bit of the fuse programming data after the associated fuse is blown during a fuse latch reset mode defined by a fuse latch reset clock signal.

11. The fuse programming circuit of claim 10, wherein the fuse programming circuit further comprises a control signal generating circuit configured to receive an external clock signal and generate the blow clock signal, pointer advance clock signal, and fuse latch reset clock signal based on the external clock signal.

12. A DRAM comprising:
a plurality of fuses;
a plurality of fuse latch circuits for holding fuse programming data;

a fuse pointer circuit for selecting fuses, the fuse pointer circuit configured to asynchronously advance past fuses that are not to be programmed to select fuses that are to be programmed, as indicated by the fuse programming data; and

a blow circuit configured to apply a blow voltage to a fuse selected by the fuse pointer circuit if the fuse programming data indicates the selected fuse is to be blown, wherein the application of the blow voltage to the fuse is synchronized with a blow clock signal.

13. The DRAM of claim 12, wherein the fuse pointer circuit is configured to asynchronously advance during a pointer advance mode defined by a pointer advance clock signal.

14. The DRAM of claim 13, wherein the fuse pointer circuit comprises a plurality of fuse pointer latches, each associated with one of the plurality of fuses.

15. The DRAM of claim 14, wherein the fuse pointer circuit is configured to select a fuse when the fuse pointer latch associated with the fuse contains a first value and the fuse pointer latch associated with a previously selected fuse contains a second complementary value.

16. The DRAM of claim 13, wherein the fuse programming circuit further comprises a control signal generating circuit configured to receive an external clock signal and generate the blow clock signal and pointer advance clock signal based on the external clock signal.

17. The DRAM of claim 16, wherein the blow clock signal and pointer advance clock signal are non-overlapping.

18. The DRAM of claim 12, wherein each of the plurality of fuse latch circuits holds a bit of fuse programming data for an associated one of the plurality of fuses.

19. The DRAM of claim 18, wherein each of the associated fuse latch circuits is configured to change the bit of fuse programming data after the associated fuse is blown.

20. A method for sequentially programming a plurality of fuses, comprising:

loading a plurality of fuse latch circuits with fuse programming data;

initializing a fuse pointer to select a first fuse;

providing a fuse blowing clock signal;

advancing the fuse pointer to select a second fuse to be blown, as indicated by the fuse programming data, wherein the advancing is not synchronized with the fuse blowing clock signal; and

blowing the second fuse, wherein the blowing is synchronized with the fuse blowing clock signal.

21. The method of claim 20 wherein the second fuse is selected immediately after the first fuse.

22. The method of claim 21 wherein advancing the fuse pointer to select the second fuse comprises switching a first pointer latch circuit associated with the first fuse from a first state to a second state.

23. The method of claim 22 wherein switching the first pointer latch circuit from the first state to the second state comprises opening a first pointer latch reset path associated with the first pointer latch circuit if the first fuse is not to be blown, as indicated by the fuse programming data.

24. The method of claim 23 wherein opening the first pointer latch reset path comprises opening the first pointer latch reset path in response to the first fuse being selected and in response to a first fuse latch circuit associated with the first fuse

containing a bit of fuse programming data indicating that the first fuse is not to be blown.

25. The method of claim 24 further comprising switching a second fuse latch circuit associated with the second fuse and selecting a third fuse being next to the second fuse in response to switching the second fuse latch circuit.

26. The method of claim 25 wherein selecting the third fuse in response to switching the second fuse latch circuit comprises:

switching a second pointer latch circuit associated with the second fuse; and

selecting the third fuse in response to switching the second pointer latch circuit.

27. The method of claim 26 wherein switching the second pointer latch circuit comprises opening a second pointer latch reset path associated with the second pointer latch circuit in response to switching the second fuse latch circuit.

28. The method of claim 20 wherein blowing the second fuse, wherein the blowing is synchronized with the fuse blowing clock signal, comprises blowing the second fuse as long as the fuse blowing clock signal is asserted, wherein the fuse blowing clock signal is asserted before the second fuse is selected and de-asserted after the second fuse is selected.

29. The method of claim 20 wherein advancing the fuse pointer comprises advancing the fuse pointer during an advance pointer mode defined by an advance pointer clock signal.

30. The method of claim 29, further comprising generating the fuse blowing clock signal and the advance pointer clock signal from an external clock signal.

31. A method for sequentially programming a plurality of fuses, comprising:

loading a plurality of fuse latch circuits with fuse programming data, wherein each fuse latch circuit holds a bit of fuse programming data to indicate whether an associated one of the fuses is to be blown;

initializing a fuse pointer to select a first one of the fuses;

generating a fuse blow clock signal, a fuse latch reset clock signal, and a pointer advance clock signal from an external clock signal;

asynchronously advancing the fuse pointer during a pointer advance mode defined by the pointer advance clock signal until a second fuse to be blown, as indicated by the bit of fuse programming data held in the fuse latch circuit associated with the second fuse, is selected;

blowing the second fuse, wherein the blowing is synchronized with the fuse blow clock signal; and

changing the bit of fuse programming data in the fuse latch circuit associated with the second fuse during a fuse latch reset mode defined by the fuse latch reset clock signal.

32. The method of claim 24, wherein the fuse blow clock signal, fuse latch reset clock signal, and pointer advance clock signal are non-overlapping.

33. The method of claim 25, wherein asynchronously advancing the fuse pointer during a pointer advance mode comprises skipping at least one fuse between the first and second fuses that is not to be programmed, as indicated by the bit of fuse programming data held in the fuse latch circuit associated with the skipped fuse.

34. The method of claim 24, wherein asynchronously advancing the fuse pointer comprises shifting a value through a shift register comprising a fuse pointer circuit for each of the plurality of fuses.